APPENDIX B

Program Analysis Section Detail

THIS SECTION includes the program requirements to be considered in the design of the facility. The requirements should be compatible with the expected use of the facility and conform to all codes and regulations. A predesign program addresses both the agency;s or institution's wants, needs, and interests for the project as well as the design parameters, constraints, and requirements of interest to the designer. These documents are the primary vehicle of communication between the agency or institution and the design team at the onset of the design effort.

The process of programming is valuable to both owners and designers as a systematic and analytical process and as a decision-making tool. This is accomplished by thoroughly examining the facts and factors that influence design solutions, and by reducing financial risk.

The program documents should conform with and enhance the previously prepared master plan (if applicable) and statement of purposes and goals. The program is a statement of requirements to be considered in the design of the facility. The requirements should not be unnecessarily restrictive in nature, but should clearly express the needs of the agency or institution.

Program documents should describe the following:

- The functions that will be housed in the proposed facility;
- The number, grouping, and nature of the people involved, including staff and support personnel, expressed as FTEs;
- The spatial relationship between the facility and the site;
- The interrelationship of the various functions to be housed in the facility;
- The major items of furniture and equipment to be used in the facility;
- Any special environmental provisions which are required in the facility;
- Future needs and flexibility requirements;
- Special systems such as voice, data, and video communications or utility needed; and
- Energy utilization and sustainability (green building) of the facility.

Program documents vary in levels of detail. The type of document most suitable for the predesign phase is a comprehensive discussion of all issues that can be identified.

B1 The Programming Process

While there are many ways to structure the programming process, it generally involves five steps:

- Data collection;
- Data analysis;
- Data organization and development of concepts;
- Communication of data and concepts; and
- Evaluation of the resulting program.

B 1.1 Sources of Information

The first task is to collect the information – facts, opinions, projections, and speculations – needed to develop the performance criteria. There are four important sources: the owner, the users, external requirements and standards, and the programmer's own experience.

- **The Owner –** The program must reflect the owner's needs and aspirations, goals, organization, and procedures.
- **Users –** In some projects, the owner is not the project's ultimate user. In these situations, it is important that the programmer understands that the needs and aspirations of the owner and users may be quite different and that both must be recognized in the design.
- **External Requirements and Standards –** Planning and zoning ordinances, building codes, the state's energy conservation and green building policies in designing public facilities, and other regulations all affect facility requirements. At the same time, planning and design standards (such as floor area requirements for auditorium seating, viewing standards for projected media, utility requirements for laboratories, and toilet requirements for handicapped accessibility) will establish certain program requirements. Parking standards and agency commute trip reduction standards can also greatly affect building configurations.
- **Programmer's Experience –** The programmer’s experience with the facility type, the owner type, or the situation faced by the owner can be invaluable in presenting options beyond the owner's familiarity. Experienced programmers understand that guidance to owners is central to effective programming and will provide this guidance during the process.

B2 Programming Standards

The state of Washington has established standards for the allocation of space for various building types: state office buildings, higher education facilities, and military facilities.

B 2.1 State Office Buildings

The Space Allocation Standards, prepared by the Department of General Administration, contains standards and instructions to agencies for state-owned and leased office space. Agencies preparing predesign documents for office buildings are required to follow these standards or provide justification for deviation. The state has established four basic goals for space allocations:

- Space allocations should be based on functional programming which will be completed before the acquisition of space.
- The state supports the use of the open landscape concept and will strive for a ratio of 90 percent of the personnel in open landscape and 10 percent in private offices.
- It is the responsibility of the occupying agency to provide furniture for leased and owned facilities. The state's goal is to use systems furniture where feasible to ensure the most efficient and effective use of space. Variances to systems furniture may be appropriate if justified due to functional requirements of the tenants.
- A space planning layout efficiency factor of 80 percent or greater is the goal for the allocation of assignable square feet.

Spaces in existing facilities that are being renovated may not conform to the space standards since efficiency in the design of spaces may be restricted by existing structural elements. However, every effort should be made to conform to these standards which can be found at http://www.ga.wa.gov/RES/form.htm

B 2.2 Higher Education Facilities

For higher education (four-year) facilities, the Interinstitutional Committee of Space Officers developed the Facilities Evaluation and Planning Guide (FEPG) as a model for use by four-year colleges and universities in preparation of capital requests. The guide addresses two elements of the programming process for higher education facilities:

- Evaluation of current capacity of physical facilities; and
- Projection of long-range facilities needs.

The guide can be obtained at or by contacting the Higher Education Coordinating Board at (360) 753-7800. An alternative to the FEPG space and programming standards may be used and should be clearly identified. An example of an acceptable alternative standard would be in the case of a multi-institutional project.

B 2.3 Military Facilities

Military facilities must be in compliance with the Department of Defense regulations for the planning, programming, and budgeting of Army and Air National Guard facilities.

B 2.4 Programming Techniques

A number of techniques can be used in data collection, analysis, organization, communication, and evaluation. Some are rudimentary; others are more sophisticated than may be required by the project. The preferred technique depends on the project complexity and the experience of the consultant.

B 2.5 Securing Commitment

Effective programming is far more than a mechanical process; it includes securing owner and user commitment to the resulting programming requirements. It is one thing to hold meetings, do interviews, research codes and standards, and write and communicate a proposal. It is a much more difficult task to get the stakeholders to participate and support a project, especially if they are not involved in furnishing data or participating in development of criteria.

As always, the key to commitment is early and ongoing involvement. The programming process should involve all the key participants, including those who are responsible as the project moves forward for construction and those who must supply approvals. Meetings should be structured to allow ample time for discussion and consensus. The programming process should be carefully documented with progressive commitment to results as it proceeds.

B 2.6 Programming and Budgeting

The program describes the scope (how much of what) and quality (the level of performance and amenity) to be accommodated. Scope and quality, as well as the site and the schedule, are key factors in establishing cost. Programming and budgeting should be seen as both simultaneous and reciprocal.

B3 Step-by-Step Programming Tasks

The following is an example of how the typical programming process works:

B3.1 Identify the basic elements and set up a structure for collecting information and making decisions.

- Set up the structure and techniques to obtain necessary information from owners, managers, community groups, and users – any persons with necessary knowledge or significant influence;
- Interview the key decision makers and users;
- Prepare an outline of the program;
- Organize the material into small parts related to the owner's interests and to the ways in which the designer will proceed; and
- Key all information to the outline.

B3.2 Document and evaluate the present building condition (if one exists), how much space is used by each entity/employee, what works well, and what does not.

- Inventory all spaces in drawings and text format;
- Inventory all furnishings and equipment that are used or will be needed;
- Have occupants and decision makers evaluate the present spaces; and
- For renovation projects, have occupants and decision makers participate in identifying areas and features to retain or to change.

B3.3 Prepare a space requirements outline (Outline Program).

- Use an acceptable standard format;
- Include basic spatial criteria such as dimensions, proportions, and volumes;
- Include services and storage requirements, access, flexibility, and utility requirements for each space; and
- Reference more detailed requirements (state standards).

B3.4 Describe overall building requirements with respect to use, purpose, and general requirements.

- List the range of users and uses, such as parking, access, security, degree of public access or privacy for various components as well as symbolic and aesthetic requirements; and
- Revise the Outline Program as required.

B3.5 Describe the role of the project in the surrounding landscape or community.

- Include zoning and environmental impacts;
- Include symbolic and aesthetic goals;
- Consider pedestrian and vehicular access to the site; and
- Identify neighborhood and growth management impacts and concerns.

B3.6 Define the fundamental functional, spatial, and visual relationships among components of the project.

- Include relationships between components or departments;
- Include relationships between the building components and the outside community or visitors;
- Describe any grouping requirements, such as for security, public access, or super-cleanliness (e.g., clean room labs); and
- Use diagrams, sketches, or other methods that suggest scale and relationships.

B3.7 **Identify measures** to allow for future growth and change.

- Identify elements subject to change, both in the short and long term. Assess probabilities of change and indicate where expansion, contraction, or alteration should be provided in design;
- Note technology and space needs that may change (e.g., mechanical and electrical systems, labs, computers); and
- Identify energy and utility systems that allow for efficient expansion.

B3.8 **Summarize key requirements** of governing codes and regulations.

- Identify and list applicable codes and regulations; and
- Cover major program requirements or constraints.

B3.9 Define energy, environmental, and sustainability requirements.

- Define the LEED criteria to obtain at least the LEED silver standard as required by Chapter 12, Laws of 2005 (ESSB 5509) for any buildings over 5,000 square feet. Conduct eco-charettes to incorporate green building concepts into the project.
- Indicate energy conservation or environmental protection measures to be pursued in design (beyond those required by code - RCW 39.35);
- Include climate and microclimate information;
- Determine whether the designer will be able to propose additions to the budget based on life-cycle cost analysis. Identify the owner's decision criteria (time frames for analysis, discount rate, etc.);
- Identify available utility assistance programs for designing and constructing an energy efficient facility (Energy Partnership).

B3.10 Develop a detailed room or space program.

- Area and configuration requirements;
- Physical access (ADA) and adjacency requirements;
- Loading and special structural requirements;
- Lighting and acoustic requirements;
- Security and safety requirements;
- Mechanical, electrical, and service requirements;
- Aesthetic requirements; and
- Special requirements.

B3.11 Prepare a summary program.

- Summarize program requirements;
- Include schedule and budget requirements; and
- Indicate how the program will be approved, revised, and updated.

B3.12 Present the program.

- Complete all the sections of the predesign as outlined in the Predesign Manual;
- Ensure that computer systems used for collecting, analyzing, and storing data are compatible with the owners' systems;
- Organize documentation into relatively small distinct packages so parts may be updated without revising the whole; and
- Gear presentation content and media to audience and purpose.